

## POST PUBLIC NOTICE ADDENDUM: June, 2007

The draft NPDES permit renewal for the BP Products North America, Inc. was made available for public comment from March 7, 2007 through May 11, 2007 as part of Public Notice No. 2007 - 3A - RD. The following comments were received by IDEM through letter and email. IDEM has written each comment and the response to each comment below along with any changes made to the permit or fact sheet:

BP  
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The following comments were received from Linda J. Wilson, Environmental Superintendent, BP Products North America Inc., Whiting Business Unit.

### Comment 1: Permit Part I.A.1 – Outfall 001 Limitations (Pre-diffuser)

The monitoring frequency for Ammonia (interim and final) should be corrected from “2 X Weekly” to “5 X Weekly” to be consistent with Part I.A.2 as well as Page 10 of the Fact Sheet.

Response 1: The monitoring frequency for ammonia on page 2 of the permit has been modified from 2 x weekly to 5 x weekly.

### Comment 2: Permit Part I.A.2 – Outfall 005 Limitations (Post-diffuser)

In the first sentence of the introductory paragraph, insert “and Alternate Mixing Zone” after “During the period beginning on the date that the diffuser

Response 2: The phrase “and alternate mixing zone” has been added to the first sentence so that it reads: During the period beginning on the date that the diffuser and alternate mixing zone is operational...

### Comment 3: Permit Part I.A.3 – Outfall 002

Correct the units for intake temperature and discharge temperature from BTU/hr to °F. In Footnote [4], insert “, converting to BTU/hr by multiplying the temperature difference by the discharge flow and the appropriate conversion factor,” after “every hour”.

Response 3: The units for measuring the influent and effluent temperature has been modified to F°/Hour to reflect that temperature is being measured in the influent and effluent, not BTUs/hour which are calculated using the influent and effluent temperature measurements. Footnote [4] has been modified as requested to clarify this permit condition.

### Comment 4: Permit Part I.C.6 – Additional Monitoring by Permittee

In the first sentence, insert “listed in Part I.A” after “If the permittee monitors any pollutant” to clarify which parameters subject to any additional monitoring must be reported on the DMRs.

Response 4: The permit has been modified, as requested, to clarify which parameters are subject to this permit condition.

Comment 5: Permit Part I.D.1 – Development of Plan

In the last paragraph, add “or Outfall 005” to the end of the sentence.

Response 5: The permit has been modified as requested.

Comment 6: Permit Part I.D.2.b.(4).(D) – Description of Potential Pollution Sources

In the introductory sentence, insert “CERCLA” after “in excess of their” for clarity, as “reportable quantity” is a CERCLA term.

Response 6: The permit has been modified as requested.

Comment 7: Permit Part I.D.2.d.(3) – Comprehensive Site Compliance Evaluation

In the first sentence, insert “for” after “SWP3” for clarity.

Response 7: The permit has been modified as requested.

Comment 8: Permit Part II.B.2.e.(2) – Bypass of Treatment Facilities

In the second sentence, change “event” to “noncompliance” for consistency with the remainder of this section.

Response 8: The permit has been modified as requested.

Comment 9: Fact Sheet Section C.3 – Alternate Mixing Zone

In the third paragraph second sentence, correct “37:1” to “37.1:1” to reflect the value generated by IDEM (ref: June 16, 2006 IDEM Memorandum “Wasteload Allocation Report for BP Products in Lake County”).

Response 9: The fact sheet has been modified as requested.

Comment 10: Section D – Outfall 002

IDEM may wish to clarify that the 119.6 mgd flow value for Outfall 002 represents the maximum monthly average for Nov 1, 1999 to Oct 31, 2001 and was submitted by BP in the April 2002 NPDES Permit Renewal Application Update. BP submitted an additional NPDES Permit Renewal Application Addendum on Nov 3, 2006 to incorporate the addition of the CXHO refinery configuration and the maximum monthly average Outfall 002 flow was revised to 96.4 mgd (pre-CXHO, based on DMR data from Jan 1, 2002 to

Dec 31, 2005) and 81.8 mgd (post-CXHO, based on best engineering judgment).

Response 10: The fact sheet has been modified as requested.

Comment 11: Section G – Outfall 001 without an Alternate Mixing Zone

In the discharge limitations table, the daily maximum phosphorus mass limit should be corrected from “180” to “Report” to be consistent with Part I.A.1 of the permit as well as Page 12 of the Fact Sheet. In the section labeled Benzo(a)pyrene, Chloride, Copper, Total Dissolved Solids, Fluoride, Lead, Mercury, Selenium, Strontium, Sulfate and Vanadium (page 12), the text “being monitoring” should be corrected to “begin monitoring” in the last sentence.

Response 11: The fact sheet has been modified as requested.

Comment 12: Section G – Outfall 005 with an Alternate Mixing Zone

In the discharge limitations table, the monitoring frequency for Phenolics should be corrected from “3 X Weekly” to “1 X Weekly” to be consistent with Part I.A.2 of the permit. Likewise, the monitoring frequency for Mercury (interim) should be corrected from “1 X Yearly” to “2 X Yearly”.

Response 12: The fact sheet has been modified as requested.

Comment 13: Section G – Outfall 002

In the discharge limitations table, the monthly average and daily maximum Total Residual Chlorine mass limits should be respectively corrected from “10” and “20” to “20” and 60” to be consistent with Part I.A.3 of the permit.

Response 13: The fact sheet has been modified as requested.

Comment 14: The following comment was submitted by Kay Nelson, Director of Environmental Affairs for the Northwest Indiana Forum:

The Northwest Indiana Forum, a regional economic development organization whose membership represents \$40 billion of annual commerce, supports the issuance of the proposed NPDES permit as public noticed by the Indiana Department of Environmental Management. The proposed \$3 billion project represents a significant economic development project for our area and serves as an example of a successful brownfield redevelopment project.

In pursuing the NPDES permit, BP worked diligently with community stakeholder groups in order to insure an understanding of the proposed project and related environmental permits. Public outreach continues with additional stakeholders. This outreach example will become a model by which future environmental permitting

processes should follow.

Thank you for this opportunity to allow the Northwest Indiana Forum to offer our support for the issuance of the proposed NPDES permit.

Response 14: Thank you for your comment. Since your comment does not address any permit conditions, there is no need to respond further.

Comment 15: The following comment was submitted by Mr. Dave Ryan who is a resident of Hammond, Indiana:

How many mixing zones currently exist along Indiana's portion of Lake Michigan? Are these mixing zones monitored by IDEM or by each facility that created the mixing zone?

Response 15: There are currently no mixing zones for process wastewater using a high rate diffuser. There are mixing zones for thermal discharges from the following facilities: State Line Energy (steam electric power plant), BP Products North America - Whiting, U.S. Steel - Gary Works, ISG Burns Harbor (formerly Bethlehem Steel) - Portage, NIPSCO Bailey Station and Michigan City Station.

The thermal mixing zones are not monitored. The effluent temperature is monitored at the point of discharge. The thermal effluent limits are based on a computer model developed for EPA. The state rules provide for a default thermal mixing zone consisting of a 1,000 feet arch from the point of discharge.

Comment 16: The following comment was submitted by Rudolph M. Zajac via email:

Gentlemen: As a citizen and taxpayer, I think that BP should be required to erect an additional wastewater treatment plant to remove ammonia from its refinery before the wastewater is discharged into Lake Michigan. Certainly, BP has the money and it can find the space it needs to build the new treatment plant. Our fresh water should not be endangered for the benefit of the shareholders of BP. The public's interest should be served, not BP's.

Response 16: The following statement has been taken from a response given by BP to members of the local environmental community regarding the proposed increase in the effluent limits for ammonia and the lack of available space to construct additional treatment facilities:

"Estimated ammonia loading to the wastewater treatment plants is expected to be more than doubled as a result of the conversion to process Canadian crudes. Ammonia removal is and will continue to be achieved through stripping of sour water and the wastewater treatment system. The reliability and efficiency of sour water stripping and wastewater treatment will be improved as part of the refinery reconfiguration. These control systems, however, are not specifically designed to remove ammonia, so they cannot be operated to achieve a specific ammonia discharge level, and are not expected

allow BP to achieve the current permit limits after reconfiguration. Direct biological treatment of ammonia would require at least 12,000 sq. ft. located in close proximity to the existing Lakefront WWTP aeration tanks. Land area to accommodate new construction and installation of biological ammonia treatment is not available at the BP Lakefront property, and remote location of such a system would not provide sufficient treatment reliability and efficiency to achieve existing permit limits.”

The following table illustrates the existing effluent limits for ammonia, the proposed effluent limits for ammonia and the highest limits that BP could possibly receive that meet the federal effluent guidelines and Indiana Water Quality Criteria:

Ammonia Effluent Limitations

	Monthly Average	Daily Maximum
Existing Limits	1,030 lbs/day	2,060 lbs/day
Proposed Limits	1,584 lbs/day	3,572 lbs/day
Fed Guideline Limits	3,358 lbs/day	7,387 lbs/day
Water Quality Limits	3,215 lbs/day	7,501 lbs/day

IDEM is confident that the increase in the effluent limits for ammonia will not result in any harm to the aquatic life in Lake Michigan and it will not cause any adverse impacts to human health by drinking the water from Lake Michigan.

It is the position of the Indiana Department of Environmental Management that: BP North America, Inc. has demonstrated that the increases in the permit limits for ammonia and total suspended solids are necessary due to the increased loading of those pollutant parameters to the wastewater treatment plant, the current lack of available space does prohibit the construction of any additional treatment facilities to further remove ammonia and TSS. Also, the increased number of jobs, the long-term viability of the existing jobs/business and the value of a new source of petroleum from a neighboring friendly country are additional positive social and economic results of the BP refinery reconfiguration.

Comment 17: The following comment was submitted by Ben Gruszka via email:

Sirs: I strongly urge you to NOT allow BP to discharge more pollution into Lake Michigan. The expansion should include the added wastewater treatment facilities that are needed. DO NOT allow them to add more toxic waste to our precious lake. Thanks for listening.

Response 17: Please see the response to comment # 16 above.

Comment 18: The following comment was submitted by Kris Komenda via email:

Dear Sir, I know your time is valuable so I will make this brief. I have a general concern regarding an increase in ammonia and sludge that could result in the BP expansion project. I wish for you to take into account all potentially adverse effects such an

increase may have on the Lake Michigan ecosystem. I believe a larger water treatment plant would be BP's responsible course of action. Thank you again for your time.

Response 18: Please see the response to comment # 16 above.

Comment 19: The following comment was submitted by Noe Garcia via email:

IT IS HARD AND SAD TO BELIEVE THAT HUMANS ARE THE ONLY SPECIE ON EARTH WHO WILL DESTROY EARTH TO MAKE A FEW DOLLARS... AS BP IS TRYING TO DUMP MORE TOXICS INTO LAKE MICHIGAN FOR MONEY YOU HAVE THE POWER TO STOP AND MAKE A DIFFERENCE.... THINK ABOUT YOUR CHILDREN AND YOUR GRAND CHILDREN WHEN MAKING THE DECISION IN REGARDS TO EXPANDING WASTEWATER TREATMENT PLANTS.... WE ALL SHOULD BE CONCERNED ABOUT HOW FAST WE LOOK FOR OUR OWN DESTRUCTION... THANK YOU FOR YOUR TIME...

Response 19: Please see the response to comment # 16 above.

Comment 20: The following comment was submitted by Jill Woodburn via email:

I would only be in agreement with BP's wastewater permit if BP upgrades its wastewater treatment plant so that it has the capacity to clean its wastewater properly before discharging it into Lake Michigan. An additional 12,000 square feet of space is a small price to pay for protecting our lake.

Response 20: BP's wastewater treatment plant does have the capacity to treat the wastewater being generated now and when they are processing the heavy Canadian crude oil because the amount of wastewater will not be increasing. Please see the response to comment # 16 above for an explanation regarding additional treatment.

Comment 21: The following comment was submitted by John Ban via email:

My comments on BP's proposed water permit would be to please act responsibly in saving the quality of our water in Lake Michigan. Any change in the quality of what is being dumped into the lake is wrong. We cannot live without pure and clean water. The detrimental effects on the environment are quite obvious and I am strongly supporting making BP build the facility to make sure our water is still as clean as it is today with **no exceptions**.

I further believe that it should not be up to the company to self-monitor the levels of pollution dumped in our water supply. Especially a large company that we have watched let maintenance lax and cause fires and problems in Texas as well as in our own back yard. I question the honesty and integrity of a company more interested in profits alone. I am hoping that you will be strong enough to do the right thing.

Response 21: Please see the response to comment # 16 above regarding the wastewater treatment system. Since the inception of the Clean Water Act in 1972, passed by the United States Congress, the NPDES permit program was designed for dischargers to monitor their own wastewater discharges. BP, formerly Amoco, received one of the first permits issued by the State in accordance with all state and federal regulations. The first NPDES permits under the Clean Water Act were issued in 1974. So, BP and all of the facilities regulated by a NPDES permit have been monitoring their own effluent since they received their NPDES permit in accordance with the Clean Water Act and federal regulations issued by the U.S. Environmental Protection Agency. In addition to the self monitoring, IDEM staff do inspect NPDES permitted facilities to ensure compliance with permit conditions. If IDEM has reason to believe any permitted facility is having problems, IDEM can do split sampling with the facility as an additional means to ensure accuracy in the self monitoring results.

Comment 22: The following comment was submitted by Bill Fisher via email:

BUT WE DO HAVE TO RELY ON THE INTEGRITY AND HONESTY OF THE COMPANIES TO MONITOR THEIR WASTE. are you people stupid? those \*\*\*\*\* made BILLIONS off of the hardships of American people! and they have been repeatedly sited for neglect in upkeep and maintenance at their facilities. NOT to mention the \*\*\*\*\* Alaskan pipeline fiasco. Don't you people talk to your own government agencies for crying out loud. Don't any of you at least watch the damn news on TV! Those PARASITES could buy the whole \*\*\*\*\* city of Whiting. You people actually have the gall to ask permission for those JERKS to pollute the lake...this is Insane and Ludicrous.. Not only do they have the \*\*\*\*\* to rob us at the gas pumps and poison our lands and endanger our families for lack of upkeep at their refineries. they've gotten our own government to shill for them.. You should be ashamed of yourselves. and speaking of integrity! it would take someone of real integrity to tell them \*\*\*\*\* to BUZZ OFF. thank you for your patience and understanding in this matter Your's Truly

Response 22: We follow the laws, regulations and rules when we write a NPDES permit. If you find the laws, regulations and rules to be inadequate, you will need to consult with the people who write the laws, regulations and rules to address your concerns. IDEM staff consult with other government departments and agencies on a daily basis. IDEM staff do not rely on television reports for their information due to the inadequate and biased information provided by the television stations. Please also see the response to comment # 16 and 21 above.

Comment 23: The following comment was submitted by Matthew Markovich via email:

I work for bp & they are a great company, very green. I also drink tap water & I think that lake Michigan's water tastes great. I think that bp being great & lake Michigan being a great lake that the stuff they want to put into it is wrong they will make a slew of money from the cheap Canadian crude. I value both the refinery & the lake, & I think that both should be kept in the best shape possible. We need to make bp keep on being great.

Response 23: Please see the response to comment # 16 above.

Comment 24: The following comment was submitted by Dave Helms via email:

I read in the paper today about the proposed expansion of the Whiting, IN BP refinery and how it would affect wastewater being emptied into Lake Michigan. I would like to strenuously object to this proposed expansion without having plans to effectively treat the wastewater. The claim is that there isn't enough room at the facility to build a waste water treatment plant to handle the increased waste from the newer, bigger plant.. So Indiana is just going to let them expand anyway? If a developer in your town wanted to build a new subdivision, but said "we can build the houses, but we cannot build a sewer, so we will just dump it in the lake" people would be up in arms and the development would be halted. This BP expansion should be halted as well.

To say they don't have enough room is absurd. The BP plant takes up half the town. I find it hard to believe that there isn't some unused portion of land on their property or nearby that can be utilized to treat this wastewater.

Lake Michigan is an irreplaceable and treasured natural resource in Northwest Indiana. To allow untreated wastewater to be dumped into the lake might cause irreparable damage to the ecosystem. The paper said BP's expansion would create 80 new jobs. How many jobs will be lost in marinas, bait shops, beaches, lakefront communities, etc if the lake becomes a foul sewer? Not to mention the aesthetic and ecological loss to NW Indiana. Why not force BP to create 100 new jobs instead of 80 by forcing them to build a proper waste water treatment facility?

Until this increased waste water can be effectively treated, no expansion should be allowed. I would welcome any public discussion on this proposed expansion.

Response 24: Please see the response to comment # 16 above. A public meeting was held at the Whiting City Hall on April 26, 2007 at which BP and IDEM made presentations about the project and the NPDES permit. IDEM responded to questions from the public after the presentation.

Comment 25: The following comment was submitted by Bob Heinlein via email:

Please halt the BP expansion. The lake does not need 1600 lbs of ammonia nor 4900 lbs of sludge from processing oil. This should be halted until they can process properly or find somewhere other than the lake to deposit waste.

Response 25: Please see the response to comment # 16.

Comment 26: The following comment was submitted by Brent Genther via email:



I am concerned with the additional waste this expansion would discharge into Lake Michigan. Reading the proposal it doesn't show any detailed study being performed. What effects the additional ammonia and sludge will have are not known.

I am a recreational scuba diver and have been diving in Lake Michigan since 1989. I would like to see more studies done before allowing the additional discharge of materials into the lake.

Response 26: Please see the response to comment # 16.

Comment 27: The following comment was submitted by Paul Thomas via email:

I live in Valparaiso, Indiana and I choose to live here for it's close proximity to Lake Michigan. I enjoy sailing, swimming and scuba diving and I am concerned about the expansion project being considered at the BP Whiting plant. I am not an environmental expert but have a deep appreciation for ecology and the health of this fragile planet we live on. I would hope that the IDEM would perform it's own study on BP'S wastewater initiatives rather than taking BP's word at face value. I want our Lake protected no matter what the cost for a study. With the oil industry posting record profits they can certainly pay for a state of the art wastewater purification system.

Response 27: Please see the response to comment # 16.

Comment 28: The following comment was submitted by Lisa Lamonte via email:

DEFINITELY NOT !! This expansion should not take place. There is already enough pollution in Lake Michigan as it is and you want to put more in it? What the heck are you thinking? Save our water....save our people !!! You guys should be ashamed of yourselves. Start thinking about the well being of our people and not your pocket books !!!

Response 28: Please see the response to comment # 16.

Comment 29: The following comment was submitted by Kenneth Pazdur via email:

I have been compelled to respond to the alarming information concerning the BP expansion in East Chicago. I have lived here in N/W Indiana for fifty seven years and seen the lake front go through many changes. Most of which went in a positive direction. But this new proposed discharge into the lake is a giant step backwards. The lake is just now recuperating from the responsibilities of the industrial revolution. BP has no other objective other than profit and answering to the board, that I understand. The only concern for the lake is how it will serve it's needs. Eighty more jobs in this area does not justify careless exposure to this potential danger to our lakefront. In fact how many of the positions will actually be filled by residents from our community. History has always shown that when the smoke clears the environment looses and then it gets tied up in court. I'm sure during the years of preparation, the imminent insignificant fines

have been considered by the architects of this project. It certainly would be more cost effective than building and maintaining the treatment plant. With all the progress made over the last thirty five years to clean up the lake, I hope it is understood that this latest attempt to assault it must be stopped.

Response 29: Please see the response to comment # 16.

Comment 30: The following comment was submitted by Pamela Zalewski via email:

I would like to ask you to save Lake Michigan. Please don't let BP kill our lake shores. We are blessed enough to live by the largest lake in the country, yet there are way to many beaches closed because of dangerous levels of toxins. And there are many reasons why, but if we continue to let refineries to continue to pollute our lake, we won't have a shore to take our children or grandchildren. Their wrong doings (and they know it) will cost not only this generation, but many, many generations to come. Then one day, some concerned pollution will come along and try to clean the mess, and the cost will come to the tax payers. It is up to you now, this generation to prevent and preserve our lake shores. I have any great memories growing up at the shores. It is my sincere hope that my grandchildren, and future great grandchildren can have many memories too.

Response 30: Please see the response to comment # 16.

Comment 31: The following comment was submitted by Mary Ward via email:

I read the article in the Post Tribune about the proposed expansion to the BP Oil Refinery in Whiting, Indiana. Based on the article, I feel that further research and testing should be done before BP is allowed to produce and dispose of more contaminants into Lake Michigan. Anyone who lives in the Whiting Area (or Northwest Indiana in General with the Steel Mill Industries & BP Oil) knows that the area can't withstand any additional contaminants to both water supply and the air quality. I believe that Indiana has one of the highest percentages of cancer in the entire United States. I am sure it is contributed to situations like this where big companies are permitted to continue to destroy the natural resources and destroy all forms of life in the process. I think this expansion should be halted until further research is done and until strict regulations are imposed on BP Oil to ensure the safety of our environment (both air quality and water supply). If they don't have the land to increase their water filtration system to ensure safety of their dumping, then they shouldn't be allowed to proceed with their plans for expansion of the plant

Response 31: Please see the response to comment # 16.

Comment 32: The following comment was submitted by Terri Williams via email:

I am writing to ask you to deny this permit. We count on agency's like yours to protect us and our water. Allowing the ammonia to be released into Lake Michigan would be a travesty and detrimental to all living things. We should not have to pay the price for BP

not having room to build additional facilities to correctly handle their wastewater. Please do not allow this to happen. Mandate that they follow the rules and protect our environment and our lives.

Response 32: Please see the response to comment # 16.

Comment 33: The following comment was submitted by April Schaefer via email:

As a member of a family that has over 60 cumulative years of past employment at Standard Oil/Amoco now BP I am very much opposed to the allowing of the expansion of their proposed wastewater permit to increase the release of sludge and ammonia amounts.

To allow this to a company who, most surely, can find the additional quarter acre on that expanse of property is outrageous. I lived for some time within sight of this refinery and know its size. The magnitude of the profits of this company make it inexcusable to give them such leeway. If they are to continue to profit so greatly at our expense, they should, at least, be held accountable for the state of the environment around them and all of us. Please, please DEMAND that BP be required to implement an expanded wastewater treatment plant! Anything less would be a travesty on us all.

Response 33: Please see the response to comment # 16.

Comment 34: The following comment was submitted by Rose Miller via email:

Regarding BP Whiting's \$3 billion expansion: Please stop this expansion from going forward. It's so imperative that we preserve our waters. It will kill us if we don't do whatever we can to protect life.

In their testing of the wastewater, lies can so easily be told, kickbacks in hand. And before the truth can actually be proven so much damage can be done, so many lives destroyed. Don't let this happen!

Please! Please! Stop the expansion!

Response 34: Please see the responses to comment #s 16 and 21.

Comment 35: The following comment was submitted by Ann Fross via email:

I live near lake Michigan and DEFINITELY want this expansion HALTED. Water is our greatest natural resource and it should not be put at risk.

Response 35: Please see the response to comment # 16:

Comment 36: The following comment was submitted by Daniel Blumer via email:

Hello,

Let me take the time to introduce myself to you. I'm a 33 year employee at Mittal Steel. I pay property taxes on 3 homes in Indiana. I bought my first home in 1980. So just hang with me and pay attention to my letter of discontent!

Lake Michigan is a gift that God gave you and I and every person in this world. Why would we want to pollute this Great Wonder of the World any further? We are very educated but we have one problem no one wants to stand up and back up what we talk about. That is the purpose of this letter.

The cities of Gary, Hobart, Portage, Michigan City and also Chicago draw drinking water from the Lake. This decision that faces you effects millions of healthy lives! Are you still with me? It is your job to protect the quality of the water in Indiana.

I'm Dead set against the idea of anymore pollution in the Lake . So are the other 3 adults that live here.

What about the beaches and swimming in the Lake not to mention the sport fishing that goes on in the Lake. To risk this for 80 jobs - come on guys do the right thing!

Make BP update their Waste processing plant then monitor the water quality, Please!!!!

Thank You,  
Daniel Blumer

PS We need to protect Lake Michigan so that future generations can use the Lake- instead of having a dead lake. Do you remember what happened to Lake Erie? Thank you for reading my letter.

Response 36: Please see the responses to comment #s 16 and 21.

Comment 37: The following comment was submitted by Max Dust via email:

I recently read an article about the BP expansion and the fact that they have inadequate treatment facilities. While I think that expansion and job growth is important for Northwest Indiana, I do not believe it should be done at the expense of the environment. Did we forget the mistakes of the 1970s?. I have lived along Lake Michigan all my life in Chicago and NW Indiana. The lake is finally getting to be in good shape and as a scuba diver and boater, I do not think we should go backwards. I encourage and demand that the IDEM force BP to create adequate treatment facilities and not be allowed to dump ANY waste into Lake Michigan!

Response 37: Please see the responses to comment #s 16 and 21.

Comment 38: The following comment was submitted by Mark Szueter via email:

I cannot believe our State and Federal gov't would allow one of Indiana's best resources ; Lake Michigan to be further ecologically compromised. One would only hope that in light of recent discoveries revealing the ecological damage to our natural resources and global environment, our lawmakers would quickly defeat such destructive issues. How can the addition of 80 local jobs outweigh the long-term damage this would cause to our region, and all others bordering Lake Michigan. I believe it is Your Duty and Mine to stop such measures! Please preserve what we have; not destroy it!

Response 38: Please see the response to comment # 16.

Comment 39: The following comment was submitted by John and Paula Bullman via email.

As property owners on Lake Michigan in Berrien County we are totally opposed to BP dumping waste in the Lake, It is not a sewer. They need to treat there waste FIRST.

Response 39: Please see the response to comment # 16.

Comment 40: The following comment was submitted by Ronald Somerville via email:

This is to protest the issuance of a permit to BP for their refinery in Whiting, IN, that will allow this company to further pollute Lake Michigan by releasing ammonia and solid waste into the lake. Enough damage to this valuable body of water has already been done over the last century. It is time to stop the polluting and devote more effort to cleaning it up!!

Response 40: Please see the response to comment # 16.

Comment 41: The following comment was submitted by Jim Bartos via email:

I am requesting that you insist that British Petroleum (BP), expand its existing wastewater treatment plant and/or build a new one. I am very worried about the increase of ammonia and sludge that will be put into Lake Michigan when BP expands its facility. I am happy to here that the company wants to invest in the Whiting Refinery. But the representatives of BP need to be more cautious about the wastewater dumping into the lake.

I grew up near beautiful Lake Michigan and I live a few hundred feet way from it. I swim in the lake regularly and I do not believe that the rapid dilution diffuser will be affective in reducing the amounts of pollutants into the lake after the company's expansion. I am humbly asking you to be more stringent with BP about this issue.

Response 41: Please see the response to comment # 16.

Comment 42: The following comment was submitted by Patricia Juchcinski via email:

I am requesting that you insist that British Petroleum (BP), expand its existing wastewater treatment plant and/or build a new one. I am very worried about the increase of ammonia and sludge that will be put into Lake Michigan when BP expands its facility. I am happy to here that the company wants to invest in the Whiting Refinery. But the representatives of BP need to be more cautious about the wastewater dumping into the lake.

I swim in the lake regularly, and we all get our drinking water from the lake. I do not believe that the rapid dilution diffuser will be affective in reducing the amounts of

pollutants into the lake after the company's expansion. I am humbly asking you to be more stringent with BP about this issue.

Response 42: Please see the response to comment # 16.

**The following comments were submitted by Mr. Cameron Davis, President of the Alliance for the Great Lakes:**

Comment 43: Mercury in effluents – We were pleased to hear that BP will evaluate state of the art information on mercury control as part of its Pollution Minimization Program Plan (PMPP), including information from EPRI. Typical crude, which BP claims the Canadian syncrude is, contains about 20 ug/kg of mercury (Hg). For 400,000 bbl/day, this works out to about 400 kg/yr of Hg, a significant amount. Their discussion of their effluent does not account for the fate of most of this Hg (less than 2.5 kg/yr is in the WWTP effluent). Is it emitted to the air? Land filled? Contained in product? Evaluations of mercury discharge should include consideration of suspended solids control and the risk of vaporization of mercury through incineration and other means. Studies have shown that approximately 96% of Hg is removed from a conventional wastewater treatment plant. (“Mercury Pathways in Municipal Wastewater Treatment Plants”, Balogh S. and Liang L.) However, if the sludge is incinerated the entire mass of Hg is then discharged to the atmosphere. The permit should be provisional for air and water emissions for Hg, and it should call for a mass balance for Hg in the Whiting refinery. The permit should be amended based on this accounting to minimize discharge of Hg to the environment. This might include elimination of the sludge incinerator and/or other steps. In view of the serious nature of mercury as a pollutant, IDEM should track the progress of these studies. A detailed schedule should be included in the permit with milestones. If 5 years to comply with the limit is provided, then a PMPP should be completed in 2 years and 3 years allowed for implementation.

Response 43: A Pollutant Minimization Program Plan will not be included in the permit until BP has submitted an application for a streamlined mercury variance (SMV). The application for a SMV is required to contain a PMP which includes milestones with a schedule for completing the milestones. When the SMV has been approved, the milestones and schedule will be inserted into the NPDES permit. BP has a permit to operate a hazardous waste incinerator and the NPDES permit program does not have the authority to demand that BP stop incinerating their wastewater sludge.

Comment 44: Total Suspended Solids (TSS) – TSS remains a significant concern because of the identity of its constituents – mercury, selenium, vanadium, other heavy metals, etc. As stated in the study referenced above, 96% of mercury is removed in a conventional treatment plant and ends up in the solids. An increase in the TSS limit could result in an increase of mercury and other contaminants from the treatment plant. Also, the anti-degradation demonstration failed to show why the additional solids to the plant could not be controlled. Not providing additional ammonia control was justified based on a lack of room to expand the facility. We would recommend that the TSS limit in the new permit not be increased. This would be consistent with the state's anti-

degradation policy. If BP would not be able to meet the current permit as a result of the increased solids loading to the plant, a schedule of compliance should be provided in the permit.

Response 44: IDEM recognizes that TSS is a generic pollutant parameter that does contain all of the pollutants being discharged such as mercury, selenium, vanadium, etc. The specific pollutants are measured in the effluent and there are limits on the specific pollutants so that none of the specific pollutants will be discharged at a level which is harmful to the environment or human health. The increase in the effluent limits for TSS are justified based on the 645% increase in TSS estimated to be present in the influent wastewater to the WWTP. The monthly average effluent limit is increasing by 35%. BP will initiate additional controls related to assuring optimal and reliable operations of the Lakefront WWTP that will allow further reduction of TSS that includes: pre-treatment of the de-salter effluent, water reduction projects to reduce hydraulic loading to the WWTP, installation of an additional storm water / surge equalization tank to allow more consistent feed to WWTP, and replacing the existing media filters (tertiary treatment) with a higher efficiency filter system.

Comment 45: Ammonia – Anti-degradation would preclude an increase in the amount of ammonia in the WWTP effluent (Outfall 001 or 005). Since there is presently uncertainty as to what the ammonia load to the plant will be and whether the efficiency of removal can be improved, we would recommend that the ammonia limit in the new permit not be increased. If BP would not be able to meet the current permit as a result of the increased ammonia loading to the plant, a schedule of compliance should be provided in the permit.

Response 45: If the effluent limits for ammonia remained equal to the existing limits for ammonia, there is no rule provision for including a schedule of compliance in the permit. If BP violated the effluent limits for ammonia, they would face an enforcement action from IDEM and possibly from EPA. The agreed order resulting from the enforcement action would possibly include a schedule of compliance.

Everyone expects BP to operate their WWTP as efficiently as possible to make their effluent water quality as good as possible. No one at this time knows exactly how the processing of the Canadian crude will impact the ammonia loading to the WWTP other than we expect the loading to be higher than it is now. BP and IDEM worked together to determine what is expected to happen based on data from another refinery that has been processing similar crude. The increase in the ammonia monthly average effluent limit is 53.8% (554 lbs/day). BP requested and sought an increase of 212% (2,185 lbs/day) based on the effluent limit calculated using Indiana water quality criteria when using the high rate diffuser/alternate mixing zone, but that level of increase could not be justified.

Comment 46: Chlorides – We acknowledge that BP's discharge is modest compared to total Lake Michigan loadings, but note that the steady levels in the southern Lake Michigan reported by BP may just prove that nears shore discharges in this area continue unabated while open lake levels increase due to all discharges (see

<http://www.epa.gov/grtlakes/monitoring/limnology/index.htm>), and to the lake's long response time. Great Lakes scientists believe the levels of chlorides in Lake Michigan and downstream lakes to be an increasingly serious concern for organism in Lake Michigan and downstream lakes, favoring alien species. Increase in blue green algae is also a concern. It would be desirable if BP's chloride discharges were reduced.

Response 46: The highest monthly average effluent value from BP's WWTP for chloride is 263 mg/l and the highest daily maximum value from BP's WWTP for chloride is 424 mg/l. The water quality based effluent limits for chloride are 6,750 mg/l as the monthly average and 13,542 as the daily maximum. As you can see, the amount of chloride in BP's effluent is orders of magnitude below the limits based on Indiana water quality criteria. Chloride is not being limited in the permit because it is not at a level which has a reasonable potential to exceed the water quality standards.

Comment 47: Expansion of the wastewater treatment plant – We are also hopeful that adequate treatment programs can be designed within existing property constraints. With the elimination of the sludge incinerators and existing parking lot, additional room to expand would be available. However, if additional space is needed, we suggest that the use of RCRA licensed areas be evaluated. A more detailed analysis of the existing facility needs to be done.

Response 47: There are no know or proposed plans from BP to eliminate their hazardous waste incinerator, so that space will not be available. The RCRA area cannot be built upon, so that space is not available.

Comment 48: Anti-Degradation – Note our comments on TSS and ammonia.

Response 48: Your comments on TSS and ammonia have been noted.

Comment 49: Holistic methods for pollutant discharge reduction – BP appears to have impressive technical resources available for this evaluation and for others issues. In conjunction with the construction related to the reconfiguration at the Whiting refinery, Bp is putting in additional controls and equipment to achieve further reductions in a number of constituents in the effluents. They are to be commended for these efforts. A detailed schedule of these changes should be included in the permit with milestones for their operation. If 5 years to comply with the limit is provided, then a PMPP should be completed in 2 years, with 3 years allowed for implementation. We ask that the IDEM permit require periodic (quarterly?) public reports for all of BP's air and water discharges that are regulated by permits.

Response 49: The schedules of compliance contained in the NPDES permit for , Ammonia as N, Benzo (a) pyrene, Chloride, Total Chromium, Hex. Chromium, Total Copper, TDS, Fluoride, Total Lead, Total Selenium, Total Strontium, Sulfate, Total Vanadium (Part I.A.1) and Whole Effluent Toxicity at Outfall 001, and for Total Vanadium (Part I.A.2) and Total Mercury (Part I.A.1 or Part I.A.2) at Outfall 001 and Outfall 005 contain a requirement for BP to submit a report within 12 months describing



how they plan to comply with the new limits and an annual report of progress thereafter until the limits are achieved or until they apply for a variance. Please see the response to comment # 43 regarding the placement of PMPP requirements in the permit. All of the reports containing the results of effluent monitoring are submitted on a monthly basis and all of those reports are public records.

Comment 50: Ecological Assessment – BP has submitted ecological assessments of the area in the vicinity of the proposed Outfall 005 along with their prior permit renewals, but the draft permit does not require further bio-assessments of the region. The IDEM permit should require such an assessment two or more years after the diffuser goes into operation to determine if changes in the benthic biology have taken place. This timing would allow the studies to be completed before the expiration of the permit and indicate whether any change in a new permit would be required. IDEM should determine whether BP should do fish contaminant studies in this area to augment existing fish contaminant monitoring programs

Response 50: The biological assessments provided by BP were to evaluate the conditions at the location of the diffuser. The bottom of Lake Michigan in that location consists of shifting sand. There is no habitat for benthic organisms or for fish nesting. The aquatic organisms in the area of the diffuser are expected to be transitory in nature. There is no way to connect the contaminants being discharged to Lake Michigan from BP to the contaminants found in transitory fish that may pass through the effluent from BP since there are numerous sources of those contaminants from both land, water and air. However, IDEM will require BP to conduct an annual survey of the aquatic life within 200 feet of the diffuser.

Comment 51: Diffuser technology – The IDEM should be explicit that a US Army Corp of Engineers permitted diffuser must be in operation on the WWTP effluent before the refinery is allowed to begin significant processing of the Canadian Extra Heavy Oil.

Response 51: The permit does require the diffuser to be operational before the limits based on the Canadian Extra Heavy Oil can become effective. The permit also requires BP to have the diffuser operational within 3 years after the permit's effective date. Since BP has to receive a permit from the US Army Corp of Engineers to install the diffuser, there is no need to require them to obtain that permit as a NPDES permit condition.

Comment 52: Greenhouse gases – We congratulate BP on their reduction of greenhouse gas (GHG) emissions by about 20% over the past 8 years at the Whiting refinery. The fact remains, however, that the GHG emissions from this facility are enormous and will further increase when heavy crude is processed. BP's continuing efforts to improve the efficiency of their operations to moderate the GHG increases look promising but it seems clear that more aggressive approaches to limit or decrease GHG emissions will be mandated by the government in the next few years. IDEM should require that plans be developed to reduce their GHG by specified amounts in the future, say 25-50%. A timetable for submission of such plans should be in the permit. Efforts in this regard

would demonstrate to local citizens and the great lakes community that BP takes global warming seriously.

Response 52: This comment has nothing to do with the NPDES permit because the NPDES permit does not regulate air pollutants.

Comment 53: The following comment was submitted by Sarah E. Cooke of West Lafayette, Indiana:

Please deny BP's request to increase ammonia and solid waste pollution to Lake Michigan. Instead – Please require the Whiting, IN oil refinery to upgrade it's waste treatment plant. Indiana must move into the 21<sup>st</sup> century in terms of environmental clean-up and controls. The taxpayers and voters of this state beg you at IDEM to protect Indiana's waterways, environment and the health of resident Hoosiers and the health of future generations. In fact, we must begin to think globally to save our earth. Let Indiana be a leader. We are counting on you.

Response 53: Please see the response to comment # 16.

Comment 54: The following comment was submitted by Anna Cicirelli of Battle Ground, Indiana:

Please do not allow BP to add more pollution to Lake Michigan! In this day and age, this kind of thinking can't be even entertained.

Response 54: Please see the response to comment # 16.

Comment 55: The following comment was submitted by Charles Gray of Lafayette, Indiana:

I am writing in response to BP Oil's request to add more pollution to Lake Michigan as a result of their planned oil refinery expansion in Whiting, IN. Indiana has long permitted too much pollution of its air and water and it is time for the polluters to install effective safeguards to protect the environment rather than continuing to cause negative impacts to the environment. This is particularly true of an industry that is experiencing record profits. I therefore request that the BP permit be denied unless BP applies the latest technology to prevent or minimize the negative impacts to the environment.

Response 55: The refinery is not expanding, it is being re-configured to process the heavy crude from Canada. The existing and proposed limits in the permit are far below the limits that are protective of all existing aquatic life and uses of the water such as drinking water. The amount of profit that an industry makes is not a factor in setting NPDES permit limits. BP's existing wastewater treatment plant produces wastewater quality that is at least three times better than the quality required to be protective of Lake Michigan. For more information, please see the response to comment # 16.

Comment 56: The following comment was submitted by Virginia Livingston of West Lafayette, Indiana:

I am certainly against the pollution of Lake Michigan proposed by British Petroleum!!!!!! Please do not permit their oil refinery expansion in Whiting. The behavior of this company has been preposterous!

Response 56: Please see the response to comment 16 and 21.

Comment 57: The following comment was submitted by Louise Robertson of Lafayette, Indiana:

Just say no to the request from BP. We need to take care of our water and not cause anymore contamination. We need to learn to get by on less gas and not be dependent on foreign oil.

Response 57: See the response to comment # 16.

Comment 58: The following comment was submitted by Ron and Carol Webb of Lafayette, Indiana:

We are avid boaters and are opposed to issuing a permit that would potential do more damage to Lake Michigan.

Response 58: Please see the response to comment # 16.

The following comments were submitted by the LaPorte County Environmental Association and signed by Mr. Tom Anderson:

Comment 59: The following comments provided on behalf of the La Porte County Environmental Association (LCEA), founded in 1986 to protect and enhance the environment of La Porte County and Lake Michigan. Lake Michigan is vital to the future of Northwest Indiana and is designated as Outstanding State Resource Water (OSRW) which is to be protected without degradation. It is our primary source of drinking water and must be protected for future generations. However, the proposed IDEM draft permit does not accomplish the legal requirements of the Clean Water Act or Indiana Law.

Response 59: IDEM followed the antidegradation rules found in 327 IAC 5-2-11.7(a)(1)(B)(iv) which allows the Commissioner of IDEM to calculate the allowable increase in the monthly average mass effluent limitation on a case by case basis when the increase in mass is not the result of an increase in flow. The principles of antidegradation were followed when evaluating this proposed increase. Those principles are: The discharger must demonstrate that the increase is necessary (i.e. the discharger must demonstrate that they have to increase the mass being discharged); The discharger must demonstrate that the increase in mass being discharged will accommodate important economic and social development in the area in which the waters are located; and the

Commissioner shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources. The U.S. EPA sent a letter to IDEM dated April 5, 2007 in which they state they have no objection to the draft permit as written. That letter supports a position that this permit does meet the legal requirements of the Clean Water Act and Indiana Law.

Comment 60: The fact sheet indicates that no additional water treatment would be required to address large increases in TSS and Ammonia because there isn't enough room. However, BP has stated only 12,000 square feet (about ¼ acre) is all that would be needed. LCEA urges IDEM require additional treatment and that the company can find or work to reconfigure the plant to accommodate that requirement or deny this request.

Response 60: Please see the response to comment # 16.

Comment 61: We are concerned that the Antidegradation demonstration did not follow Indiana law and rule related to the huge increase in pollution from the process. Although the flow is not increased, there is a huge increase in ammonia and TSS proposed to be discharged to Lake Michigan. We challenge IDEM's interpretation of the purpose of Antidegradation for Lake Michigan to show that water quality will not be degraded by this process and urge IDEM to require additional treatment to eliminate additional pollution to Lake Michigan.

Response 61: IDEM did follow Indiana Law and Rule regarding the proposed increases in TSS and Ammonia. These increases are considered to be significant increases in the loading of those pollutants to Lake Michigan. Although these increases do result in some degradation, the new monthly average mass effluent limit is approximately ½ of the mass that could be discharged and still meet Indiana water quality criteria for ammonia. Also see the response to comment #s 16 and 59.

Comment 62: The thermal impact of this facility must be considered and ways to reduce thermal impact must be included in this permit. The 316(a) Thermal Variance that was issued for this plant was done in 1975, over 30 years ago. There have been substantial changes in the ecosystem from that time and IDEM should be required to perform a study to reduce the thermal impact from this facility. We have much better technology today and a more urgent concern about thermal impacts to Lake Michigan.

Response 62: The 316(a) thermal variance which was conducted and approved in 1975 has been renewed in all previous permits due to the lack of prior appreciable harm and the thermal discharge has not increased. Now BP is proposing to decrease their thermal discharge to the Lake. However, a condition is being included in the permit to require BP to make a demonstration for the renewal of their 316a in their next permit renewal.

Comment 63: Diffuser – Is this the first into Lake Michigan? How did IDEM determine there would be no biological impact from this? Where was that information circulated? Since water quality standards will not be met within the mixing zone, there is a serious

concern that a diffuser not attract fish and aquatic life into that zone. What is being done to prevent exposure?

Response 63: Yes, this is the first high rate diffuser being placed into the Indiana Waters of Lake Michigan. IDEM's Biological Studies Section reviewed the application and the revisions to the application for an alternate mixing zone/diffuser submitted by BP on August, 1994, March, 1998 and April 8, 2002.

The evaluation by the IDEM, OWQ Biological Studies Section recommends the following:

1. A comprehensive Toxicity Identification Evaluation and Toxicity Reduction Evaluation should be conducted prior to the diffuser being implemented
2. Careful consideration should be made on the support structure for the diffuser head to avoid creating attractive habitat that would draw aquatic life into the mixing zone
3. A monitoring and preventative maintenance program should be developed that prevents damage or failure of the diffuser heads, and
4. A chemical and biological monitoring program should be implemented that demonstrates the ongoing efficacy of the diffuser operation.

The effluent from the process wastewater treatment plant has demonstrated periodic toxicity. However, the mixing zone will mitigate the toxicity through the quick dispersion and mixing of the effluent. Although there is no longer as much concern about the toxicity of the effluent after the diffuser becomes operational, the permit will contain a requirement to test the effluent for chronic toxicity prior to the operation of the diffuser and for chronic toxicity after the diffuser becomes operational. Please see the effluent limitations rationale for Whole Effluent Toxicity (WET) for an explanation of the permit requirements for WET.

IDEM does not possess the authority to adjust the construction of the diffuser head support structure due to Indiana Statute IC 13-14-8-11.6. The statute states that a discharger is not required to obtain a state permit for the modification or construction of a water pollution treatment or control facility if the discharger has an effective NPDES permit.

Part II.B.1 of the permit requires the following: The permittee shall at all times maintain in good working order and efficiently operate all facilities and systems (and related appurtenances) for the collection and treatment which are installed or used by the permittee and which are necessary for achieving compliance with the terms and conditions of this permit in accordance with 327 IAC 5-2-8(8). BP will be required to submit their operation and maintenance plan for the diffuser to IDEM.

The permit contains effluent monitoring and limitations for the pollutants that are expected to be present and for Whole Effluent Toxicity. The maintenance of the diffuser should maintain the efficacy of the diffuser. However, to ensure that the diffuser is not causing harm to the aquatic life near the diffuser, BP will be required to conduct an annual survey of the aquatic life in the vicinity of the diffuser.

There was a public meeting in 1994 in Whiting regarding the original submittal of an application for an alternate mixing zone. This information was also made known to the public when the permit was public noticed on March 7, 2007.

All mobile and floating aquatic life have the potential to be exposed to the effluent from BP and from any other NPDES permitted point source discharge in Lake Michigan. The use of a diffuser, which creates a discharge induced mixing zone, will reduce the amount of time that aquatic life is exposed to the effluent from BP's wastewater treatment plant and it will also reduce the concentration of the pollutants from BP's discharge in Lake Michigan.

Comment 64: Mercury – Mercury is one of the pollutants of concern in the BP waste stream and is listed as a BCC under Indiana law. We understand BP will apply for a Mercury Variance under Indiana Law once the NPDES permit is issued. We urge a very aggressive process to reduce mercury in the wastewater. However, we are also concerned that sludge containing mercury captured in the wastewater not be incinerated since that would release the mercury from the wastewater into the air and deposit it in Lake Michigan.

Response 64: BP has a permit to operate a hazardous waste incinerator and the NPDES permit program does not have the authority to demand that BP stop incinerating their wastewater sludge. Also see the response to Comment # 43.

Comment 65: Lake Sturgeon – LCEA is concerned about the biological impacts from the increased water discharges into Lake Michigan and the use of a diffuser, when we understand is the first to be used in Lake Michigan for process water. Lake Sturgeon is very rare in Indiana and we ask how IDEM considered the impact on Lake Sturgeon or other aquatic life since the antidegradation was not publicly circulated to other state and federal agencies or the public. We have had conversations with agency staff about the sturgeon and urge IDEM to assure this species is protected by any discharges into Lake Michigan.

Response 65: IDEM is aware of the presence of Lake Sturgeon in the near shore environment of Lake Michigan. The size of the mixing zone (a radius 182 feet from the diffuser) is not very large and the diffuser ports will be pointed up. The rapid mixing of the effluent caused by the high rate of discharge from the diffuser will create a mixing zone that is much better for aquatic life than the existing situation where the effluent is discharged at the shore of Lake Michigan and it slowly mixes with the water of Lake Michigan. The existing discharge has not caused any fish kills, and using a high rate diffuser will reduce the amount of exposure and concentration of pollutants that may be present whenever a fish wanders into the mixing zone. The proposed mass effluent limits for ammonia are approximately  $\frac{1}{2}$  the mass allowed for this discharge to meet Indiana water quality criteria for ammonia, so it is well below the level deemed to be protective of all aquatic life..

Comment 66: Chloride levels are increasing in Lake Michigan. We are concerned about the high levels of chlorides discharged from this facility and urge IDEM to required BP to investigate ways to reduce chloride loading into the lake.

Response 66: Please see the response to comment # 46.

The following comments were submitted by Ms. Charlotte J. Read of Chesterton, Indiana:

In comparing the draft permit sent out under a March 12, 2007 cover letter from IDEM with an older version we received. I noted some differences between the two documents and they include the following:

Comment 67: For total chromium, the early draft interim limit monthly average was 22.85 mg/l and the daily maximum was 65.65 mg/l: the draft numbers increased to 23.9 mg/l monthly average and 68.53 mg/l daily maximum. The final limits were identical on both documents. What are the correct existing limits for total chromium?

Response 67: The permit issued to Amoco on March 29, 1985 does contain the following limits for total chromium: 22.8 pounds/day (lbs/day) monthly average and 65.6 lbs/day. That permit was modified on May 13, 1985 in response to an appeal. A reading of the fact sheet indicates that the permit issued on March 29, 1985 did not include additional increases in the permit limits to account for storm water that is being treated by the wastewater treatment plant. The small increases came from a referenced 1984 settlement agreement. The permit that was re-issued on March 5, 1990 contains the adjusted limits of 23.9 lbs/day as the monthly average and 65.83 lbs/day as the daily maximum.

Comment 68: For hexavalent chromium, the interim monthly average was 1.87 mg/l and the daily maximum was 4.2 mg/l in the old permit. IN the draft permit interim monthly average is 2.01 mg/l and the daily maximum is 4.48 mg/l. which are the correct interim limits? Again final limits agree.

Response 68: The same thing that happened to the limits for total chromium happened for hexavalent chromium and BOD, TSS, COD, oil and grease, and Phenolics. The slightly higher interim limits are the current limits taken from the permit modification issued on May 13, 1985.

Comment 69: Page 13, paragraph d on the old draft includes three paragraphs that describe how a flow proportioned composite sample may be obtained. Why was this omitted from the later draft?

Response 69: IDEM staff determined that there was no need to require the composite samples to be flow proportional because the flow from the BP wastewater treatment plant is pretty consistent and they take a composite sample once every hour. Flow

proportioned samples are necessary when the discharge flow rate has significant changes over the course of a day, but this is not the case with the BP wastewater treatment plant.

Comment 70: Page 17 of the old draft eliminates the Storm Water Pollution Prevention Plan (SWP3) for storm water discharges routed to treatment and then discharged through Outfall 001. This provision would hold promise for reducing pollutant in these storm water discharges before they get to Outfall 001. Why was this provision removed from the new draft?

Response 70: One of the draft versions of this permit did contain a requirement for BP to develop a storm water pollution prevention plan for the entire refinery, but we later realized that the BP facility sends all of the storm water from their refinery area to their wastewater treatment plant. A storm water pollution prevention plan is required for storm water associated with industrial activity if the discharge consists entirely of storm water, there are no effluent guidelines for the storm water and the storm water is not receiving treatment. In this case, the storm water is being treated and there are federal effluent guidelines for contaminated storm water from a refinery. The permit for BP does not include any allocation from the federal effluent guidelines, but as mentioned in the response to comment # 67, BP was given some small allocation for the treatment of their storm water in a permit modification issued on May 13, 1985.

Comment 71: Page 43 of the draft permit, paragraph 16 appears to be missing the word "discharge" in the second line.

Response 71: The permit will be modified to include the word "discharge" in the second line of Part II.A.16.a immediately after the word "increased".

Comment 72: Page 47 item 4, entitled "Removed Substances" in the old draft includes this language: ..be disposed of in a manner such as to prevent any pollutant from such materials from entering waters of the state....disposal." I urge IDEM to re-include that language in the new draft for clarity.

Response 72: IDEM conducted a comprehensive review of the rules and statutes to establish the basis for this requirement. IDEM found that there is only one rule that is equivalent to this permit condition and it is found in 327 IAC 15-4-2(g). This rule provision is based on the permit condition found in individual NPDES permits. IDEM believes that this permit condition was one of the original permit conditions found in the NPDES permit template developed by EPA back in 1974-1975. There are several other rules that give IDEM the authority to have this permit condition such as 327 IAC 5-2-8, 5-2-10, and 5-5-2(e).

This permit condition, which includes the phrase: be disposed of in a manner such as to prevent any pollutant from such materials from entering the waters of the state, is found in every NPDES permit issued by Indiana and it is found in the NPDES permit issued to BP/Amoco on March 5, 1990. Therefore, the permit will be modified such that it is consistent with all other NPDES permits.



Comment 73: I believe that IDEM has fallen woefully short on requirements in the draft permit for limiting the increases in pollutants and pollutant parameters attributed to the proposed refining of more Canadian Crude. As I read 327 IAC 5-2-11.7, it requires that IDEM ensure that water quality of Lake Michigan, an Outstanding State Resource Water, is maintained and protected in its present high quality. The specific requirements are intended to achieve these goals. For example, Vanadium is a new pollutant included in the draft permit. How was the effluent limit determined? Was the background concentration in Lake Michigan, if any, determined, as required by the rules, before a limit was set?

Response 73: Please see the response to Comment # 59 regarding the implementation of antidegradation. Vanadium is a new pollutant parameter because water quality criteria were developed since the previous permit was issued. The discharge from BP has apparently always included Vanadium, but it was not limited in the previous permit due to a lack of water quality criteria. 327 IAC 5-2-11.7(b)(2) applies to a situation where a new limit is required for an existing discharger that are not the result of increases in pollutant loading and will not allow an increase in pollutant loading including new limits that are the result of New or modified water quality criteria or values. BP provided IDEM with results for Vanadium from six water samples taken from Lake Michigan in 1998. The geometric mean of those sample results = 0.0031 mg/l. This value was included in the model used to calculate the water quality based effluent limits.

Comment 74: ATSDR has developed a ToxFAQs for Vanadium and Compounds, one in a series of summaries about hazardous substances and their health effects. The ATSDR information was from 1995, but as a hazardous substance being discharged into Lake Michigan, I am concerned that the effluent limit being proposed may not be sufficiently protective of Lake Michigan resources and users.

Response 74: IDEM has derived Tier I human health criteria and Tier II aquatic life values for Vanadium. The Tier II aquatic life values are the basis of the permit limits for BP Products. Acute toxicity data for 4 of the required 8 families are available. This resulted in the SMC (it is called the CMC for Tier I criteria) being derived using an adjustment factor of 7. There were no chronic data or acute to chronic ratios, so the SCC (it is called the CCC for Tier I criteria) was derived using an assumed acute to chronic ratio of 18. The adjustment factor and assumed acute to chronic ratio were established by EPA based on data for other pollutants. In developing the Tier II methodology, EPA wanted to be highly certain that Tier II values provide a level of protection that is greater than or equal to that of Tier I criteria. However, it is possible that a Tier II value could be less stringent than the Tier I criterion that would be derived once the necessary data are obtained. The GLI SID provides background information on the Tier II methodology. The Tier II methodology does allow the derived value to be lowered for a commercially or recreationally important species. In the case of vanadium, Chinook salmon and rainbow trout are included in the dataset and they are not the most sensitive species. BP Products could do acute toxicity studies to increase the number of families so the adjustment factor may be lowered. They could also do chronic studies to establish acute

to chronic ratios.

Comment 75: It is unclear what procedures IDEM has developed in pursuing antidegradation principles in determining limits for pollutants and pollutant parameters because BP is not increasing its flow. Even a case by case procedure for determining mass in these cases must result in limits that meet the goals of protecting Lake Michigan water quality and existing uses. Would the mass limits have changed if flow had increased? If so, how?

Response 75: Please see the response to comment # 59 for a description of the principles used in the antidegradation process for this increase in the mass for ammonia and TSS. The increased limits for ammonia and TSS are protective of the water quality in Lake Michigan and it does protect the existing uses.

The rules for calculating increases in the mass based on a increase in flow are much different than the rules for calculating increases in mass when there is no increase in flow. The discharger has two choices when they are increasing their flow. The first choice is to accept an increase in mass equal to the increase in flow times the background concentration of a pollutant in Lake Michigan. That can be done without submitting any type of demonstration.

The second choice is to follow the procedure described in 327 IAC 5-2-11.7(c)(3) where the discharger has to show that the increase is necessary and the increase is limited to 10% of the unused loading capacity. The total loading capacity is based on the size of the approved alternate mixing zone. If a discharger to Lake Michigan does not have a diffuser and an approved alternate mixing zone, then the total loading capacity is zero.

Comment 76: IDEM seems to have ignored many if not most opportunities for public participation for proposed new and/or increased discharges to our Great Lakes waters.

Response 76: IDEM followed all of the applicable public notice rules and requirements regarding the antidegradation demonstration and the draft NPDES permit. IDEM voluntarily set up a public meeting on April 26<sup>th</sup> to provide the public with information from BP on the scope and purpose of their re-configuration and from IDEM on the basis for the conditions in the draft NPDES permit. IDEM met with local environmental representatives two times prior to the public meeting to answer questions and provide information.

Comment 77: 327 IAC 5-2-11.2 requires the Commissioner to provide notice, request comment and schedule a public meeting when an application for an alternate mixing zone is received. According to 327 IAC 2-1-11.3(4), upon request of an antidegradation demonstration, the Commissioner shall provide notice, request comment and if requested, hold a public meeting in accordance with Section 11.2 of this rule.

Response 77: The alternate mixing zone application was submitted in 1994 and a public hearing was held at that time. 327 IAC 2-1-11.3(4) is an incorrect rule reference. IDEM

relied on 327 IAC 5-2-11.2 as a guide on the matter of when the receipt of an antidegradation demonstration must be public noticed. According to 5-2-11.2(a) the following antidegradation actions require public notice: (2) An antidegradation demonstration under section 11.3(b)(4) and (3) An antidegradation exception under section 11.7(c) of this rule. The antidegradation rule utilized in this case is 327 IAC 5-2-11.7(a)(1)(B)(iv).

Comment 78: For example, 327 IAC 5-2-11.7(a)(1)(E)(i), (ii) and (iii) requires a discharger to notify the Commissioner of a proposal to discharge a new or increased pollutant and its amount. The Commissioner then is to provide public notice and opportunity for public comment on the proposal. Was this done in a timely fashion prior to any issuance of a BP draft permit? If so, when and where was this public notice provided? When a determination is made by the Commissioner, this also requires a notice.

Response 78: Notice of the permit and the public meeting were provided to the public via a public notice in the Gary Tribune on March 7, 2007. In the first paragraph of the notice for the public meeting it states: "On September 1, 1994, this industrial facility submitted an NPDES permit application, and an application for an alternate mixing zone. On November 30, 2006, they submitted the required antidegradation demonstration per 327 IAC 5-2-11.7(a)(1)(B)(iv) for the proposed increase in the effluent limitations for ammonia as N and total suspended solids (TSS)." The final permit decision, which includes the decisions regarding the alternate mixing zone and the antidegradation demonstration for the increased effluent limits for TSS and ammonia, will be provided to the people who commented on this permit and the people who are on the list of people to receive notice of all permit actions in accordance with IC 4-21.5-3.

Comment 79: 327 IAC 5-2-11.7(c) requires public notice and comment if the Commissioner permits that actions in subdivisions (1), (2) or (3) in accordance with subdivision (6) if a thermal discharge is involved. Was this provision followed when Whiting Clean Energy began to discharge through Outfall 001?

Response 79: The application from BP Amoco and Whiting Clean Energy was submitted under the interim version of 327 IAC 5-2-11.7 originally adopted by the Water Pollution Control Board in February of 1997. 327 IAC 5-2-11.7(b)(1) was utilized in the decision to allow Whiting Clean Energy to discharge their cooling tower blowdown to BP Amoco's wastewater treatment plant. At that time, an exception found in 327 IAC 5-2-11.7(b) did not require notice under 5-2-11.2.

Comment 80: Further in this same subsection, at (c)(3)(A) it states that when the Commissioner makes a tentative decision on the application, including that the new or increased discharge complies with subsection (c)(4), after the close of the public comment period, the Commissioner shall present the tentative decision and public comment materials on the application to the Water Pollution Control Board. The Board can make recommendations to the Commissioner, but the Commissioner makes the final decision.

Response 80: 327 IAC 5-2-11.7(c) is not the rule that was used in this case. Subsection (c)(3) states that an action that will result in the new or increased discharge of a pollutant or pollutant parameters that is not a BCC into an OSRW for a facility with an existing NPDES permit for a discharge into that OSRW may be permitted in accordance with the following:... 327 IAC 5-2-11.7(a)(1)(B)(iv) is the rule that was used in this case. The requirement for the Commissioner of IDEM to go before the Water Pollution Control Board in 327 IAC 5-2-11.7(c)(3)(C) only applies to demonstrations submitted under 327 IAC 5-2-11.7(c). It is not applicable to a demonstration submitted under 327 IAC 5-2-11.7(a)(1)(B)(iv).

Comment 81: IDEM ignores provisions of 327 IAC 5-2-11.7(c)(2) in drafting the BP permit. Why not, since it gets to the heart of the antidegradation provisions for Lake Michigan, subsection (c)(6) also provides for notice, comment and scheduling a public meeting on the application. Since this was not done by IDEM it is unclear to me what the agency considers an exception.

Response 81: IDEM did not use 327 IAC 5-2-11.7(c)(2) in drafting the BP Permit. As explained in the response to comment 80, 327 IAC 5-2-11.7(c)(6) is also not applicable to this situation. The exceptions are listed in 327 IAC 5-2-11.7(c).

Comment 82: In a larger context, what does IDEM consider as its responsibilities to the public under the myriad of provisions for participation in Great Lakes water rules, in providing early notice about requests for new or increased discharges of pollutants and pollutant parameters to these waters? Based upon the citations above, IDEM passed up many opportunities to foster meaningful public involvement long before a draft permit for BP was issued.

Response 82: IDEM considers it to be responsible for following the rules set forth in 327 IAC 5 for public notice and participation in the permitting process.

Comment 83: The conclusion of the antidegradation demonstration for ammonia and TSS that no additional treatment was required due to a lack of available lane would have received the kind of public scrutiny that even now should require IDEM to insist that ammonia treatment facilities must be constructed. For all new and increased discharges proposed, a complete antidegradation analysis includes pollution prevention, pollution minimization and alternative or enhanced treatment to eliminate or reduce the lowering of water quality should be performed. The Advent Group alternatives analysis states that because BP is an existing discharger, examining these alternatives does not apply [Page 5-7 of the alternatives analysis]. Does IDEM agree that these steps are not required for BP or any other existing discharger?

Response 83: IDEM did not accept the original position of BP presented in the Case by Case Antidegradation Analysis completed for BP by the Advent Group. After reviewing the antidegradation analysis, IDEM sent several emails to BP and also had a conference call with BP on December 8, 2006 to point out deficiencies in the antidegradation

analysis submitted on November 30, 2006. One of the deficiencies was the lack of analysis for pollution prevention, pollution minimization and alternate or enhanced treatment to remove ammonia and TSS. The Advent Group submitted an addendum to the original antidegradation analysis on December 12, 2007. In the December 12<sup>th</sup> addendum, the Advent Group on behalf of BP states that there is not available space to accommodate additional treatment tanks at the Lakefront WWTP which makes the option of additional treatment infeasible.

Comment 84: IDEM as far as we know, has no experience with the efficiency, operation, or impacts of the high rate diffuser that BP is proposing for "treating" its process water, or its real world ability to meet the final effluent limits. If IDEM is sticking with the diffuser decision, IDEM must require both enhanced monitoring of the aquatic life and other existing uses in the area where the diffuser will be constructed and where the mixing is to occur. It must also require biological monitoring after installation for a number of years, at least for the life of the initial and the first successor permit. It must also require monitoring of the zone of initial dilution and the larger mixing area out to and beyond where the final effluent limits are theoretically to be met. IDEM's own Assessment Branch has expressed concerns about the diffuser, including the toxicity of the effluent, support structure becoming an attraction to aquatic life, diffuser maintenance and biological monitoring to ensure efficient diffuser operation.

Response 84: IDEM has approved the use of diffusers in several Indiana streams. IDEM is going to require BP to submit their operation and maintenance plans for the diffuser to ensure that the diffuser is being maintained and operated properly. IDEM is also going to require BP to conduct an annual survey of the aquatic life in the immediate area of the diffuser. Please see the response to comment # 63.

Comment 85: If the diffuser is not installed, and ammonia treatment is required, IDEM should also require BP to install additional treatment for the other pollutants and pollutants parameters that are being increased. Advent's antidegradation analysis notes a potential for the existing WWTP to have difficulty complying with TSS, COD, oil & grease, sulfide and hexavalent chromium limits.

Response 85: If BP does not install the diffuser within three years after the effective date of the permit, they will be required to achieve compliance with limits that are calculated without the benefit of the alternate mixing zone. It is likely that the resulting enforcement action will require BP to either install the diffuser or install additional/better treatment facilities to meet the much more stringent limits.

Comment 86: Last but not least, I believe that a separate antidegradation analysis will be required for the BP diffuser to receive water quality certification from IDEM. IDEM still has a chance to issue a final permit to BP that protects Lake Michigan, a public water held in trust for the people of the state of Indiana. I hope you will do so.

Response 86: IDEM believes that the proposed permit for the discharges from BP is and will be protective of Lake Michigan and all of its existing and designated uses.

The following comments were submitted by Save the Dunes Council located in Michigan City, Indiana and it was signed by Mr. Tom Anderson, Executive Director and Ms. Constance M. Clay, Resource Specialist:

Comment 87: Total Suspended Solids (TSS)/Ammonia increases and waste water treatment – British Petroleum's March, 2007 fact sheet has identified "lack of space" as the prohibiting factor in the Refinery's potential inability to satisfactorily treat wastewater to remove the anticipated increases in TSS and Ammonia Loadings.

Also, Save the Dunes is particularly concerned about the BP Whiting's projections that ammonia loadings would be "more than doubled" as a result of the conversion to Canadian crudes. Increases in nitrogen will have a substantial, negative impact on the health and vitality of Lake Michigan, thus, making BP Whiting's ability to properly treat the additional loads essential. We note that Lake Michigan is the drinking water source for millions of people.

Recommendation: Save the Dunes Council strongly urges IDEM to require the necessary, additional treatment of the facility's wastewater to capture the anticipated increases in TSS and Ammonia and assure no increase in pollution to Lake Michigan. We further recommend that BP Whiting add wastewater treatment expansion plant to the proposed \$3 Billion reconfiguration project to meet those requirements. Finally, we strongly recommend that IDEM encourage BP to adopt innovative parameters to accommodate the addition of 12,000 square feet of wastewater treatment capacity.

Response 87: The anticipated increase in the loading of ammonia to BP's wastewater treatment plant is an estimate based on the information available at this time. The increases in the loading of ammonia to Lake Michigan will be well below the allowable loading calculated using Indiana water quality criteria for ammonia. Therefore, the increase in ammonia loading will not have substantial, negative impacts on the health and vitality of Lake Michigan. Please see the responses to Comment #s 45 and 83.

Comment 88: Mercury – While BP Whiting has acknowledged that the facility will apply for a Mercury Variance under Indiana Law after the approval and issuance of their National Pollutant Discharge Elimination System (NPDES) permit renewal, Mercury is a recognized pollutant in the waste stream and a bioaccumulating chemical of concern (BCC). Save the Dunes challenges BP Whiting to consider alternative methodologies, including the Electric Power Research Institute (NPRI)'s technology findings and the use of taconite, which would aid in lowering of mercury levels in the effluent.

Recommendation: Save the Dunes recommends that BP Whiting Not incinerate the sludge captured in wastewater treatment since incineration would release the mercury embedded in the sludge and potentially deposit in Lake Michigan. Mercury has been identified as a neurotoxin as well as an endocrine disruptor, which essentially retard development in fetuses and newborns. In adults, mercury can cause major neurological problems affecting vision, motor skills, blood pressure and fertility. IDEM must insist

that BP develop and implement a Pollution Minimization Program Plant to effectively treat Mercury in the effluent.

Response 88: Please see the response to comment # 43.

Comment 89: Alternate Mixing Zone – According to the BP's fact sheet, BP Whiting has submitted an alternate mixing zone demonstration, in accordance with 5-2-11.4, for discharge through a submerged diffuser. Further, BP Whiting has indicated that the discharge-induced mixing zone will extend a distance of 182 feet from the diffuser and the diffuser's location will change as the current direction changes.

Also, IDEM's Office of Water Quality evaluated the alternate mixing zone biological assessment, which ensures that the mixing zone, given several potential impairments, would not:

1. Interfere with or block passage of fish or aquatic life
2. jeopardize the continued existence of an endangered or threatened species or result in the destruction or adverse modification of such species' habitats
3. extend to drinking water intakes
4. impair or otherwise interfere with the designated uses of the receiving water
5. promote undesirable aquatic life or result in a dominance of nuisance species
6. allow substances to settle to form objectionable deposits
7. allow floating debris, oil, scum, and other matter in concentrations that form nuisances
8. allow objectionable color, odor, taste or turbidity, or
9. cause adverse effects to human health, aquatic life or wildlife.

Additionally, Save the Dunes shares IDEM's concern that the support structure of the diffuser could become an attraction to aquatic life. This concern is particularly important, given that, as we understand it, the introduction of the diffuser into Lake Michigan waters is the first of its kind. Therefore, Save the Dunes is not convinced that BP Whiting has adequately shown that the alternate mixing zone will not cause harm to aquatic life, wildlife or human health.

Regrettably, IDEM has failed to disclose their agency's evaluation on BP's biological assessment on the possible effects of the diffuser on aquatic species in Lake Michigan. Therefore, Save the Dunes is hesitant to accept BP Whiting's statement of "no harm" as it may not go far enough to alleviate the concerns regarding the health of aquatic species and the water quality of Lake Michigan.

Response 89: IDEM is going to require BP to submit their operation and maintenance plans for the diffuser to ensure that the diffuser is being maintained and operated properly. IDEM is also going to require BP to conduct an annual survey of the aquatic